RFS Mobdus & AISG Systems	CNI, ACU, NEM-ALD-A, NEM-ALD-S
Quick start Guide	**10 000 000 492 REV 2.1**

Authors : Maurice Guillou, Yann Gouezel

Responsibility	APM/GPM	Quality	CTO	Project Manager
Date				
Name	David Kiesling	Detlef Block	André Doll	Luc Renard d'Arvil
Visa				

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History

Version	Date	Modified by	Type of Changes	Status
0.1	2006-11-08	GOUEZEL Y.	First draft	Preliminary
1.0	2006-11-21	GUILLOU M.	First release	
1.1	2007-03-05	GUILLOU M.	Revised, added screenshots.	
1.2	2007-03-25	GUILLOU M.	Add photos and site commissioning	
1.3	2007-08-07	GUILLOU M.	Java environment	
1.4	2007-09-06	GUILLOU M.	Revised. Java installation and environment updated	
2.0	2008-01-04	GUILLOU M.	Updated. NEM-ALD applications are Java independent	
2.1	2008-01-25	GUILLOU M.	Caution for connecting the NEM-ALD-A to the ACU-A11S-N	

Conventions This Guide Uses

The text that the user enters is between quotes (‘). Do not key in the quotes.
The text or icon displayed by the computer is between double-quotes (“).

Special keys of the keyboard are surrounded by ‘<’ and ‘>’.
<SPACE> is the space character; to enter it, press the spacebar of the keyboard.

Click means press the left mouse button once and release it immediately.
Double-click is press the left button twice in rapid succession.
Right-click means press the right mouse button once and release it immediately

Caution

The HDLC address of the ACU-A11S-N, dedicated for Siemens AISG 1.1 NodeB, is preset to 8. Do not connect the NEM-ALD-A to those devices because it will erase and set a different address to them.

1 Installation of AISG System

1.1 System environment

NEM-ALD-S communicates through a crossover Ethernet cable connected to the Ethernet port of the CNI; it includes the latest embedded software for the CNI, TMA and RET.

NEM-ALD-A communicates through a special serial cable connected to the PC port of the CNI or through the protocol adapter.

Required PC software

- Windows XP SP1 or SP2

Since Release 3, the NEM-ALD applications do not require the Java Virtual Machine (JVM) installed on the computer.

Minimum hardware requirements for NEM-ALD-A and NEM-ALD-S:

- Screen resolution 1024x768 or greater
- 256 MB of RAM or more
- 1.5 GHz system clock or more
- 6 MB hard disk space or more

1.2 Installation of NEM-ALD-A or NEM-ALD-S

To run the installation setup, the user must have administrator rights on the system.

Read sections 1.1 to check the system and software environments.

In the following sections, the procedure for installing the NEM application is described; it applies to both the NEM-ALD-S and NEM-ALD-A versions.

From the CD or the folder where the NEM-ALD setup program is located, double-click the executable and follow the instructions to install NEM-ALD to the local PC. The user must have write permission for the directory where the software will be installed.

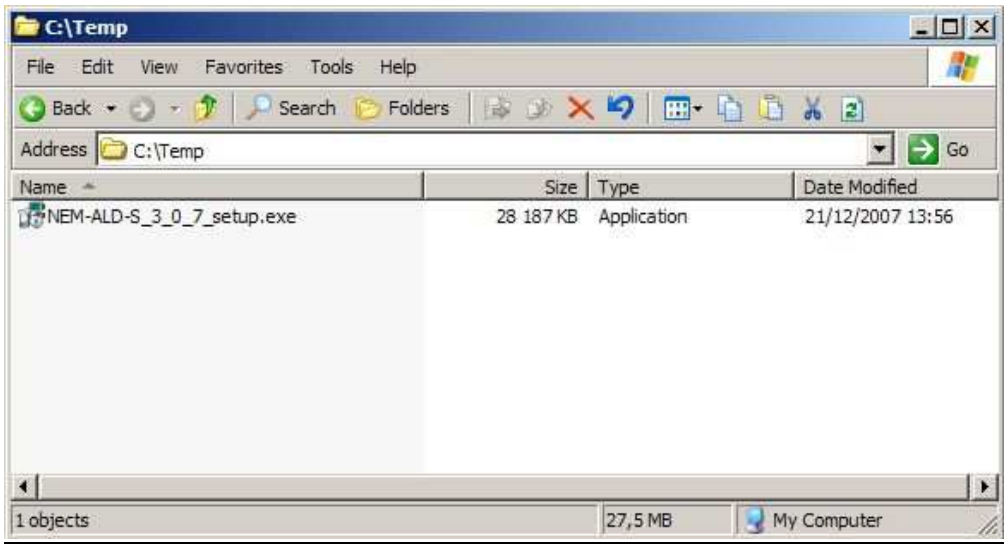


Figure 1-1: Launching the NEM-ALD-S setup

Double-click the icon to launch the installation.

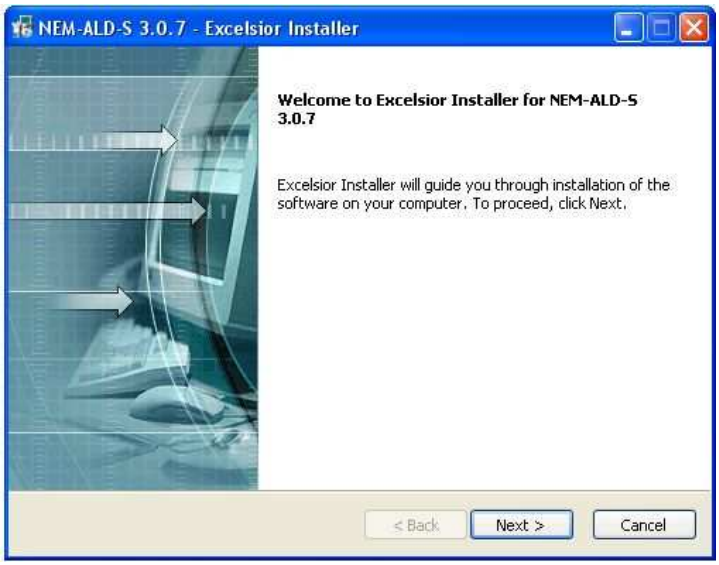

NEM-ALD-S 3.0.7 - Excelsior Installer
Welcome to Excelsior Installer for NEM-ALD-S 3.0.7
Excelsior Installer will guide you through installation of the software on your computer. To proceed, click Next.
< Back
Next >
Cancel

Figure 1-2: Starting the installation

Click the “Next” button to continue.

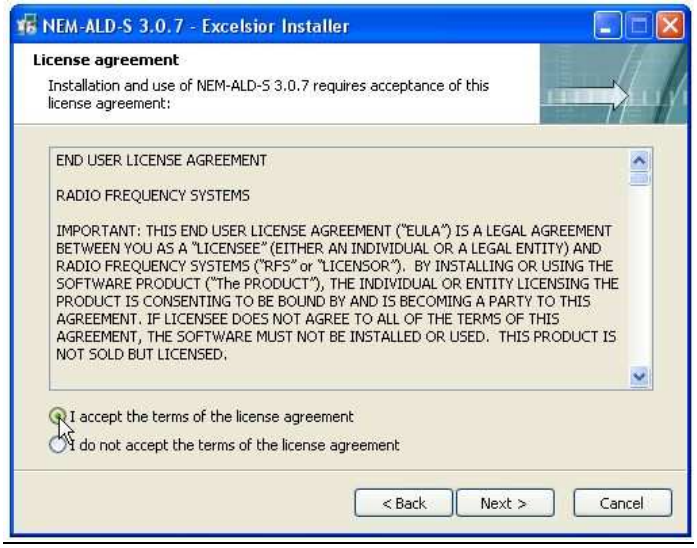

NEM-ALD-S 3.0.7 - Excelsior Installer
License agreement
Installation and use of NEM-ALD-S 3.0.7 requires acceptance of this license agreement:
END USER LICENSE AGREEMENT
RADIO FREQUENCY SYSTEMS
IMPORTANT: THIS END USER LICENSE AGREEMENT ("EULA") IS A LEGAL AGREEMENT BETWEEN YOU AS A "LICENSEE" (EITHER AN INDIVIDUAL OR A LEGAL ENTITY) AND RADIO FREQUENCY SYSTEMS ("RFS" or "LICENSOR"). BY INSTALLING OR USING THE SOFTWARE PRODUCT ("The PRODUCT"), THE INDIVIDUAL OR ENTITY LICENSING THE PRODUCT IS CONSENTING TO BE BOUND BY AND IS BECOMING A PARTY TO THIS AGREEMENT. IF LICENSEE DOES NOT AGREE TO ALL OF THE TERMS OF THIS AGREEMENT, THE SOFTWARE MUST NOT BE INSTALLED OR USED. THIS PRODUCT IS NOT SOLD BUT LICENSED.
I accept the terms of the license agreement
I do not accept the terms of the license agreement
< Back
Next >
Cancel

Figure 1-3: Accepting the “End User License Agreement”

Click the “Next” button.

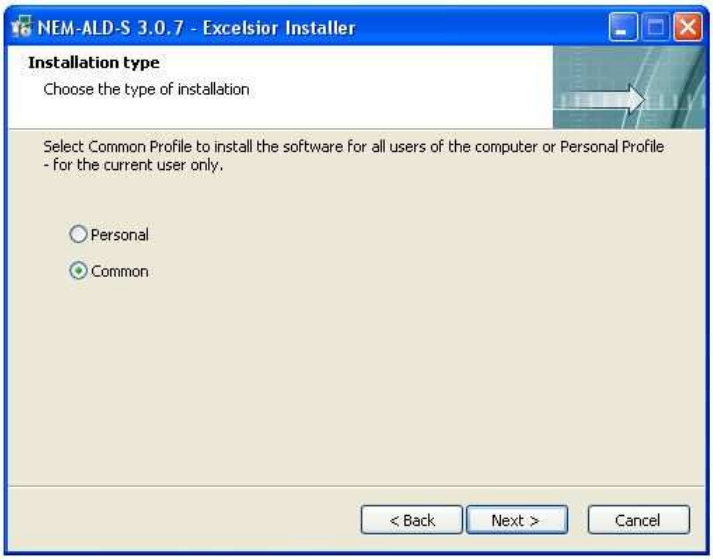

NEM-ALD-S 3.0.7 - Excelsior Installer
Installation type
Choose the type of installation
Select Common Profile to install the software for all users of the computer or Personal Profile - for the current user only.
Personal
Common
< Back
Next >
Cancel

Figure 1-4: Selecting the appropriate user

Click the “Next” button to continue.

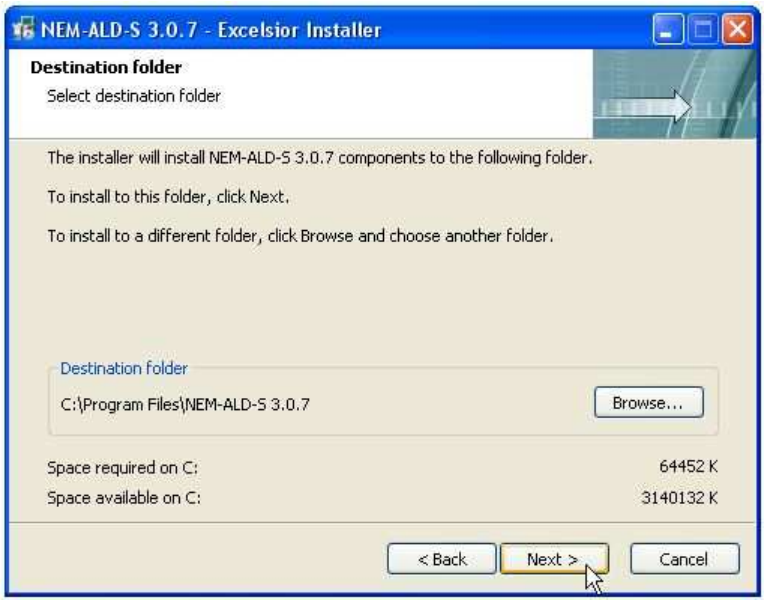

NEM-ALD-S 3.0.7 - Excelsior Installer
Destination folder
Select destination folder
The installer will install NEM-ALD-S 3.0.7 components to the following folder.
To install to this folder, click Next.
To install to a different folder, click Browse and choose another folder.
Destination folder
C:\Program Files\NEM-ALD-S 3.0.7
Browse...
Space required on C:
64452 K
Space available on C:
3140132 K
< Back
Next >
Cancel

Figure 1-5: Selecting the destination folder

If it is necessary, click the “Browse” button to modify the destination folder; by default, it will be installed under “C:\Program Files”.

Click the “Next” button.

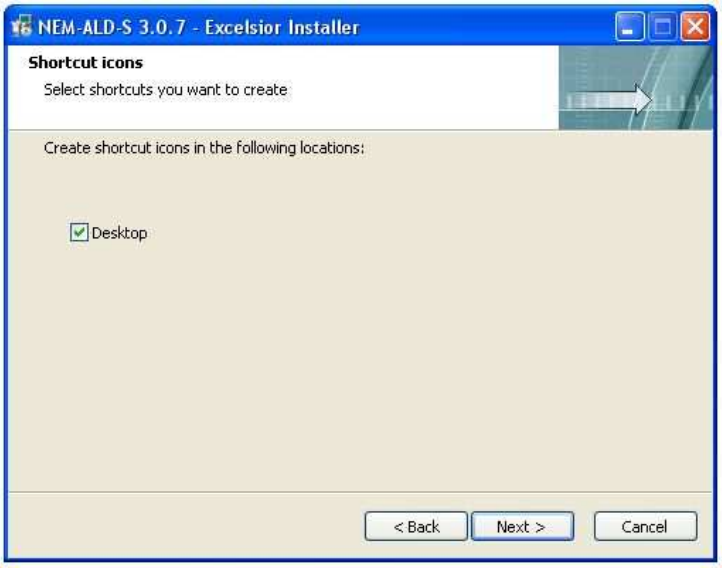


Figure 1-6: Creating a shortcut

Click the “Next” button to continue.

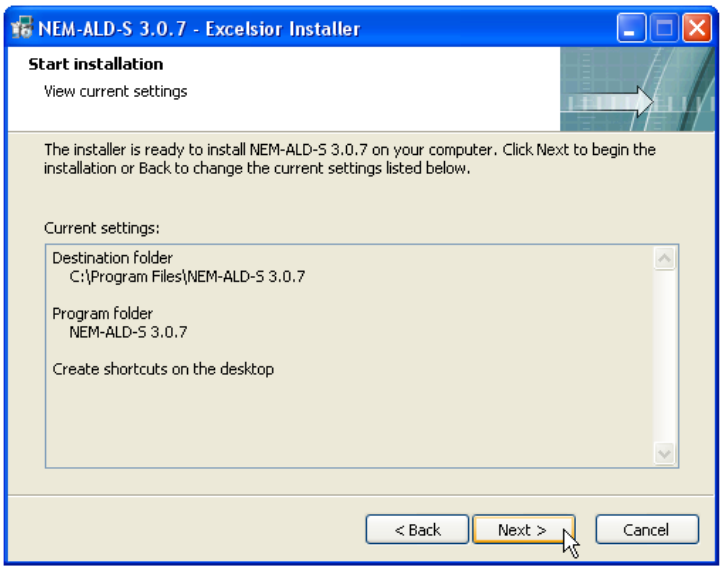

NEM-ALD-S 3.0.7 - Excelsior Installer
Start installation
View current settings
The installer is ready to install NEM-ALD-S 3.0.7 on your computer. Click Next to begin the installation or Back to change the current settings listed below.
Current settings:
Destination folder
C:\Program Files\NEM-ALD-S 3.0.7
Program folder
NEM-ALD-S 3.0.7
Create shortcuts on the desktop
< Back
Next >
Cancel

Figure 1-7: Ready for installation

Click the “Next” button.

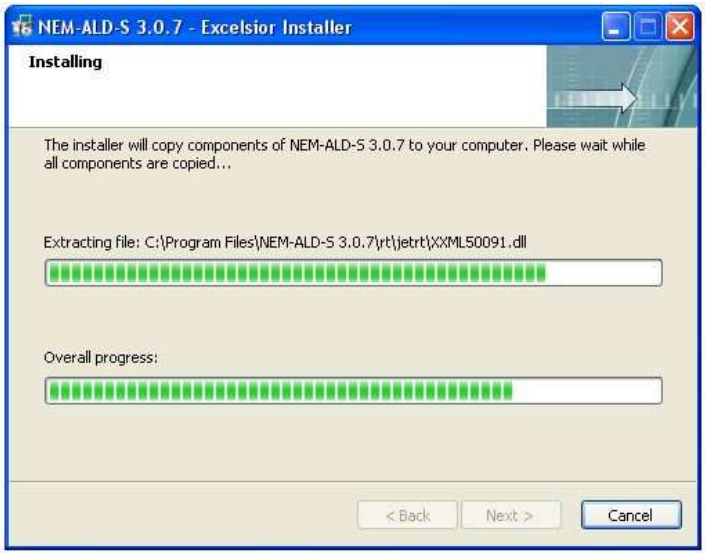

NEM-ALD-S 3.0.7 - Excelsior Installer
Installing
The installer will copy components of NEM-ALD-S 3.0.7 to your computer. Please wait while all components are copied...
Extracting file: C:\Program Files\NEM-ALD-S 3.0.7\rt\jetrt\XXML50091.dll
Overall progress:
< Back
Next >
Cancel

Figure 1-8: Installing

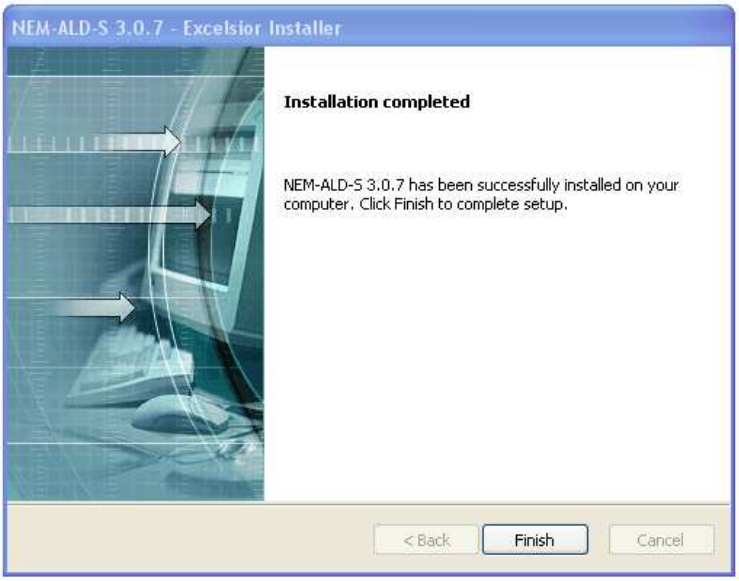

NEM-ALD-S 3.0.7 - Excelsior Installer
Installation completed
NEM-ALD-S 3.0.7 has been successfully installed on your computer. Click Finish to complete setup.
< Back
Finish
Cancel

Figure 1-9: Completing the installation

Click the “Finish” button.

After the installation, two shortcuts are created to launch NEM-ALD-S; they are placed in the appropriate locations:

Start Menu (NEM-ALD-S folder)

NEM-ALD-S	run NEM-ALD-S

Desktop icon

NEM-ALD-S	run NEM-ALD-S

For NEM-ALD-A

After the installation, two shortcuts are created to launch NEM-ALD-A; they are placed in the appropriate locations:

Start Menu (NEM-ALD-A folder)

NEM-ALD-A	run NEM-ALD-A

Desktop icon

NEM-ALD-A	run NEM-ALD-A

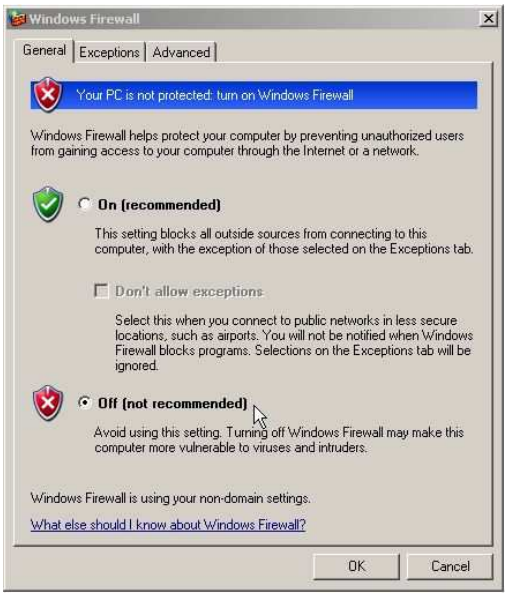
2 Configuration of the AISG system in Ethernet mode

Caution: Before modifying the network parameters of the PC, write down the current configuration to be able to set it back again.

The CNI can be configured in either the static or dynamic IP address mode, sections 2.1 and 2.2 cover these two topics, but let us focus on the setting of the firewall first.

No firewall should be active between the CNI and PC: from the Start menu, go to Control Panel, double-click “Windows Firewall” icon and disable the firewall.

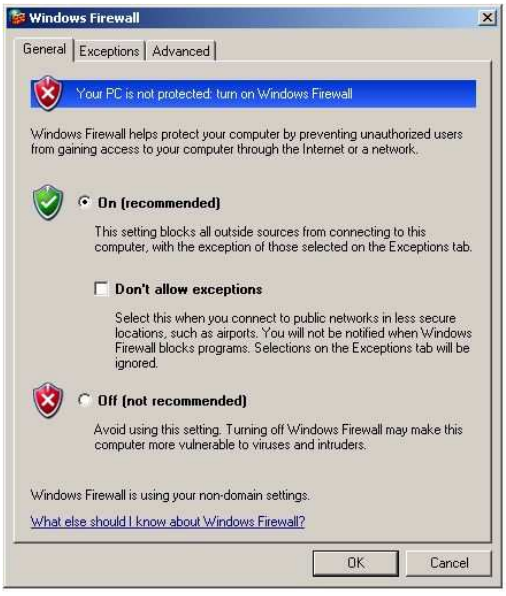
Figure 2-1: Selecting the firewall in the control panel


Windows Firewall
General
Exceptions
Advanced
Your PC is not protected: turn on Windows Firewall
Windows Firewall helps protect your computer by preventing unauthorized users from gaining access to your computer through the Internet or a network.
On (recommended)
This setting blocks all outside sources from connecting to this computer, with the exception of those selected on the Exceptions tab.
Don't allow exceptions
Select this when you connect to public networks in less secure locations, such as airports. You will not be notified when Windows Firewall blocks programs. Selections on the Exceptions tab will be ignored.
Off (not recommended)
Avoid using this setting. Turning off Windows Firewall may make this computer more vulnerable to viruses and intruders.
Windows Firewall is using your non-domain settings.
What else should I know about Windows Firewall?
OK
Cancel
Figure 2-2: Disable the firewall

An alternative way

Instead of having the firewall off, it is possible to allow exceptions such as for NEM-ALD-S so that it may access to the network without the firewall blocking it.

After selecting the “Windows Firewall” from the control panel, check the “On (recommended)” option:


Windows Firewall
General
Exceptions
Advanced
Your PC is not protected: turn on Windows Firewall
Windows Firewall helps protect your computer by preventing unauthorized users from gaining access to your computer through the Internet or a network.
On (recommended)
This setting blocks all outside sources from connecting to this computer, with the exception of those selected on the Exceptions tab.
Don't allow exceptions
Select this when you connect to public networks in less secure locations, such as airports. You will not be notified when Windows Firewall blocks programs. Selections on the Exceptions tab will be ignored.
Off (not recommended)
Avoid using this setting. Turning off Windows Firewall may make this computer more vulnerable to viruses and intruders.
Windows Firewall is using your non-domain settings.
What else should I know about Windows Firewall?
OK
Cancel

Select the “Exceptions” tab and click “Add Program…” button.

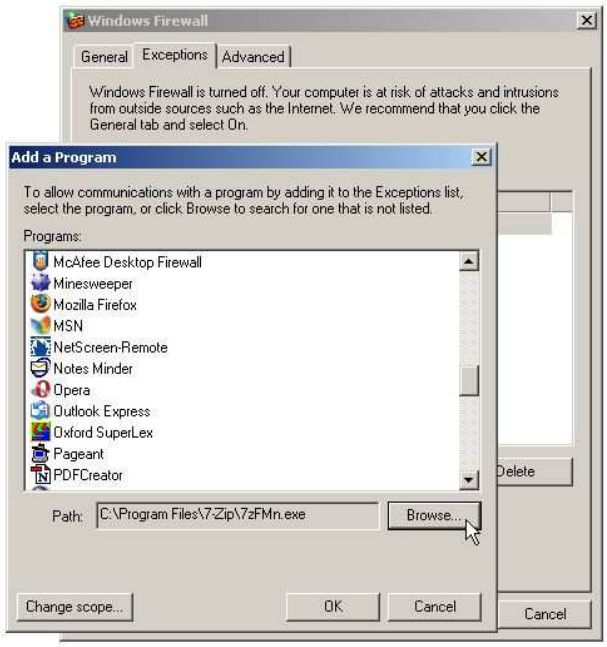


Figure 2-3: Allowing exception for NEM-ALD-S

Click the “Browse…” button and select the folder where NEM-ALD-S is located; by default, it is under “ C:\Program Files\NEM-ALD-S x.x”.

Select “All Files (*.*)” in the ‘Files of Type’ menu, click the ‘NEM-ALD-Sxx.exe’ application so that it appears in the ‘File Name’ select box.

Figure 2-4: Selecting NEM-ALD-S as an exception

Click “Open” button and the following window will pop-up, it shows the NEM-ALD-S executable in the list of programs that are not blocked by Windows firewall.

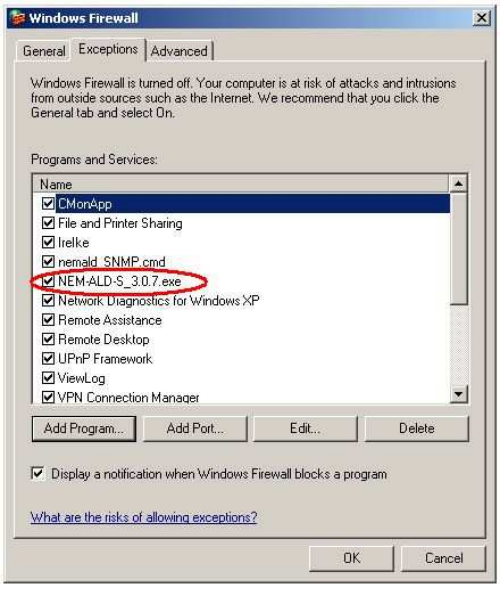


Figure 2-5: NEM-ALD-S may bypass the firewall

2.1 Static IP address

This is valid for version 2.0 and above of NEM-ALD-S.
The PC and PPP ports of the CNI should remain disconnected.
Both the CNI and PC must have a static IP address and be connected to the same network; a direct Ethernet cable between the PC and CNI is also an option.

2.1.1 Setting the IP address of the CNI

If it is necessary to change the IP address of the CNI (the IP may not be set yet or has to be re-configured), from the "Start / All Programs" menu, launch the "RFSLocateIP" program.

Figure 2-6: Launching the tool to set the IP address

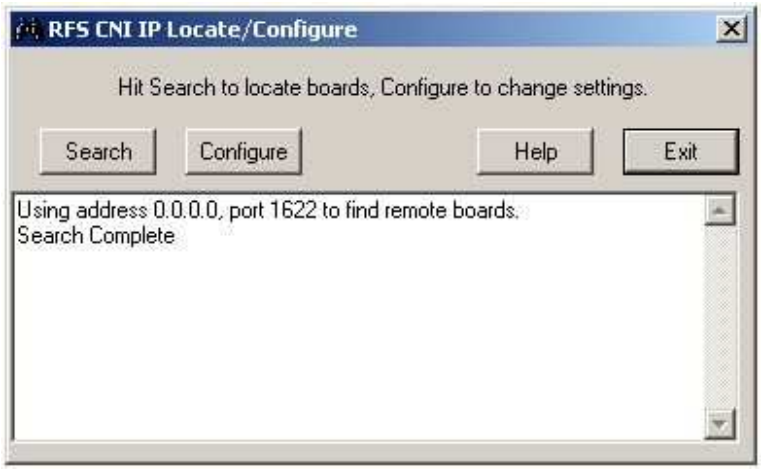


Figure 2-7: RFS CNI IP address setting tool

Click “Configure” button.

Select “Set Manually” and type-in the IP address settings:

IP Address : for instance ‘192.168.1.100’
Net Mask: ‘255.255.255.0’
Gateway: ‘192.168.1.0’

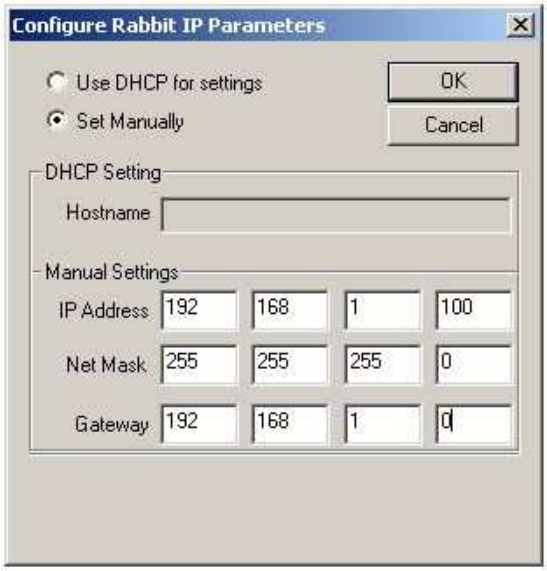


Figure 2-8: Setting the static IP address of the CNI

Hit the “OK” button.

It is possible to check that the PC can communicate with the CNI by hitting the "Search" button in its main screen. As a result, it should show the configuration that has just been set as depicted in the figure below.

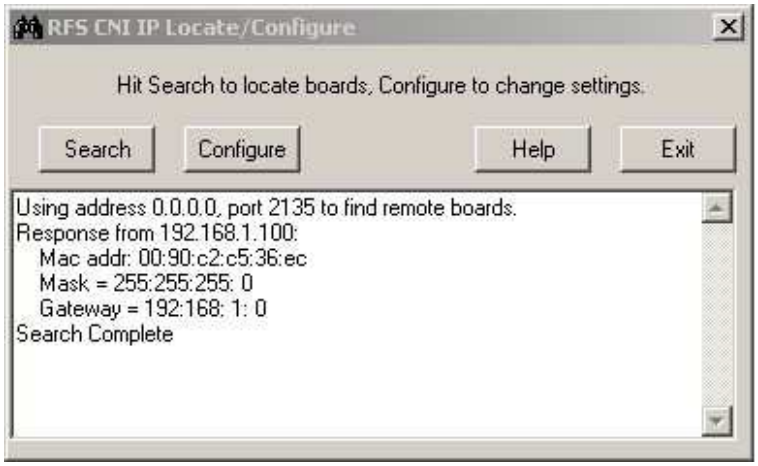


Figure 2-9: Verifying the IP configuration of the CNI

In a network environment (even with a DHCP server running), set a different IP address within the same subnet to each CNI.

2.1.2 Setting the IP address of the PC

In the static IP mode, the PC must have its own fixed IP address as well.
To configure the network, go to Control Panel and click "Network connections" icon, highlight the local Area Connection, right-click and select "properties".

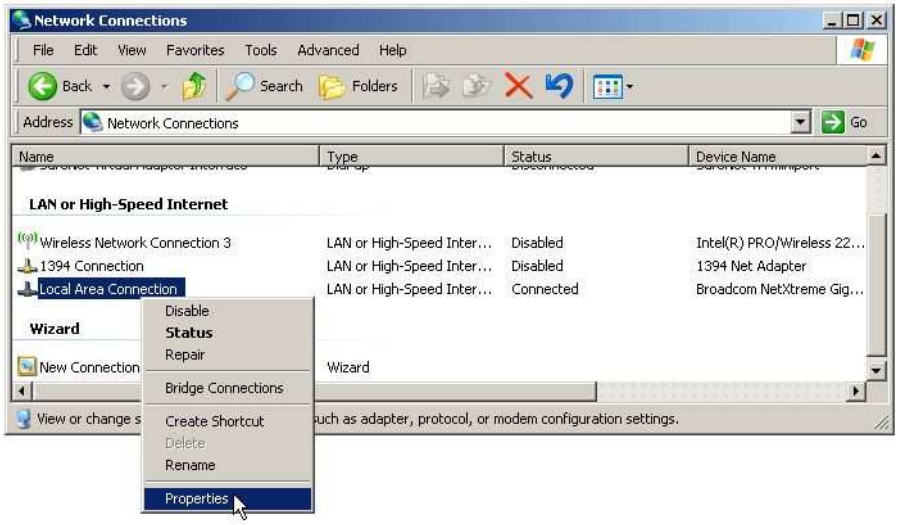


Figure 2-10: Configuring the Ethernet network of the PC

Select Internet Protocol (TCP / IP) and click the “Properties” button.
Select “Use the following IP address” and type in the PC IP address :

- IP Address : for instance ‘192.168.1.101’
- Subnet Mask: ‘255.255.255.0’
- Default Gateway: ‘192.168.1.0’

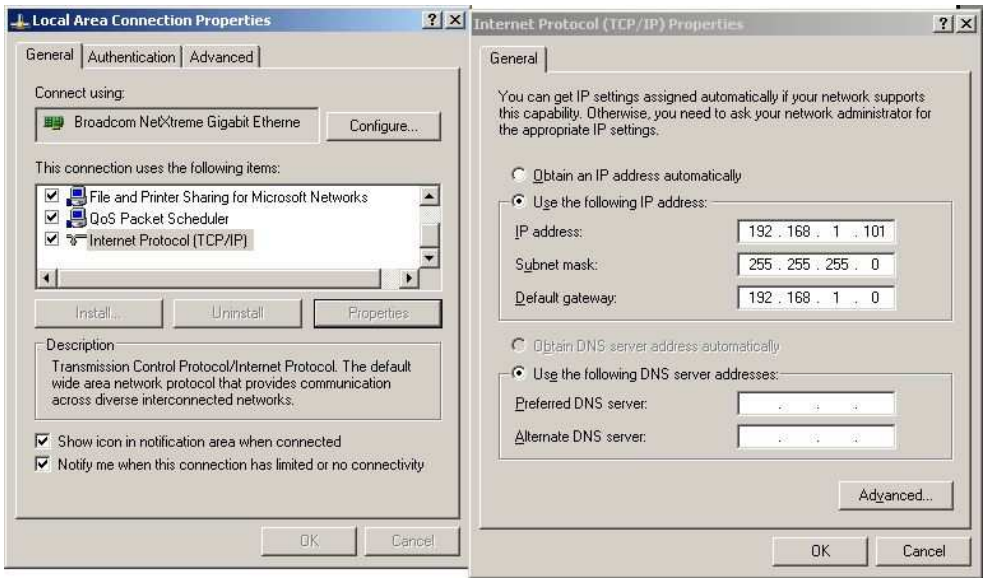

Local Area Connection Properties
General Authentication Advanced
Connect using:
Broadcom NetXtreme Gigabit Etherne
Configure...
This connection uses the following items:
File and Printer Sharing for Microsoft Networks
QoS Packet Scheduler
Internet Protocol (TCP/IP)
Install... Uninstall Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Show icon in notification area when connected
Notify me when this connection has limited or no connectivity
OK Cancel
Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 1 . 101
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 1 . 0
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK Cancel

Figure 2-11: Setting the IP address of the PC

Once complete, hit the “OK” buttons.

2.2 Dynamic IP address

Connect the CNI and the PC to the same network.
The PC and PPP ports of the CNI should remain disconnected.

The DHCP server, that provides the dynamic IP addresses, must be running on the same network as the CNI and the PC.
To configure the network, as in section 2.1.2, go to Control Panel and click “Network connections” icon, highlight the local Area Connection, right-click and select “properties”. Select Internet Protocol (TCP / IP) and click the “Properties” button.
Depending on the DHCP server, leave as “Obtain an IP address automatically” or set the IP address provided by the DHCP server, in that case set the subnet mask to ‘255.255.255.0’.

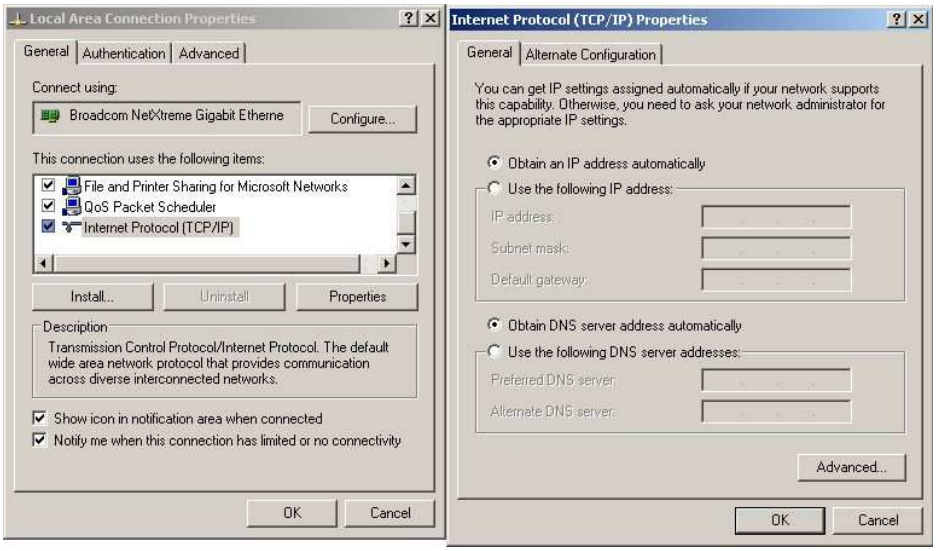
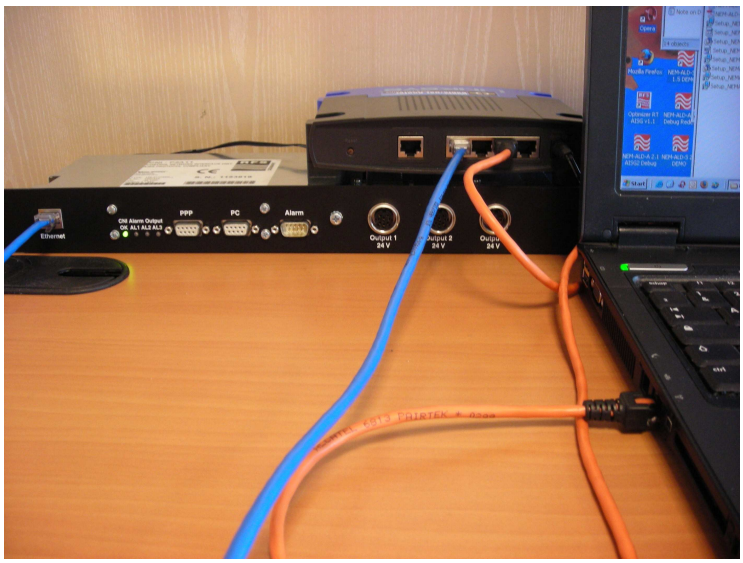


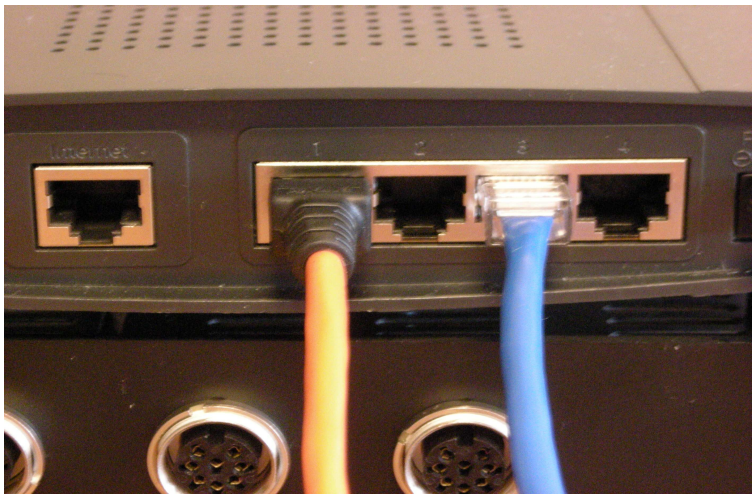
Figure 2-12: Setting the PC network to DHCP mode

Using a retail router as the DHCP router

1. Make sure the PC is configured to get an IP address automatically as described previously.

2. Connect an Ethernet cable from the router (any port except the Ethernet port) to the PC, do the same for the CNI (Ethernet port on the left of its front panel).





Setup with a retail router - Connection at the router (detail)

3. Power up the router.
4. Power up the CNI, which is going to request its IP address from the router, then it scans the ALDs (orange LEDs scrolling) and eventually the 4 green LEDs will be on.
5. Once completed, on the front panel of the router, the LED of each connected port turns green, it may blink when there is some traffic.
6. If it failed, start again to step 1 and recycle the power of the router before the power of the CNI.

   To verify that there is some traffic between the PC and the router, go to control panel / network Connection, the Local Area Connection should be displayed. If the router is off or the Ethernet cable is disconnected, the status of this network will be “Network cable unplugged”, once the cable has been connected, the status is updated to “Acquiring the address”, that should last about 5 seconds. When the connection is established, the status is “Connected”.
   Go to control panel / network Connection, select the Local Area Connection in the list, double-click it (if you right-click, select Status), the connection section should show “Connected”, the numbers of packets sent and received should increase, especially when connected to the web page of the router.

To figure out the IP address of the PC, go to control panel / network Connection, select the Local Area Connection in the list, right-click it and select “Status” and then the “Support” tab, the IP address of the PC is displayed. Other solution: when starting NEM-ALD-S, it opens a DOS window where it displays, after a couple of seconds, the IP address of the PC.

By accessing to the web page of the router, the DHCP client table lists the IP addresses of all connected devices.

3 Configuration of the AISG system in Serial mode

To set up the CNI and the AISG network, turn off the power supply of the CNI. Connect the serial cable from the computer to the “PC port” of the CNI.

4 Connecting the outputs

Please make sure that the CNI is off prior to this operation.

For each of the three output ports:

- Connect the cable feeding the tower equipments to the Surge Arrestor, which can be a Smart Bias-Tee in case the AISG signal is mixed into the RF feeder.

Connecting a Modbus RET to the Surge Arrestor

Connecting an AISG Smart Bias-Tee to the TMA RF feeder

- It is possible to daisy-chain multiple RETs.

Two Modbus RETs daisy-chained

- Use an AISG cable to connect the CNI to the Surge Arrestor, this can be through an AISG splitter as well.

AISG jumper connected to the Surge arrestor (Modbus)

AISG jumper connected to the Smart Bias-Tee (AISG 2.0)

Turn on the power supply of the CNI: its 4 greens LEDs should be on, before ALD1, ALD2, and ALD3 LEDs turn off.
A couple of seconds later, the CNI scans the outputs, the LEDs turns orange; once the scanning process is complete, the 4 LEDs are green.

The system is now ready for use.

5 Running the AISG system in Ethernet mode

Double-click the NEM-ALD-S icon, the application opens a command window, it displays some text, including the IP address of the computer.
A couple of seconds later, a login dialog box will pop up.

Enter the IP address of the CNI, and then type your user ID and password.

Figure 5-1: Logging to the CNI

If there is a problem with the network access to the CNI, an error dialog box “CNI cannot be reached” will pop up, in that case check the network and IP configuration (see also FAQ).

Prior to connecting or disconnecting an AISG jumper from the output; please switch off the CNI first.

Please note:
Since the release of NEM-ALD-S 3.0, the login process has been improved, refer to its user guide for details.

6 Running the AISG system in serial mode

Double-click the NEM-ALD-A icon, the application opens a login dialog box.

Select the COM port of the computer to which the serial cable is connected, then type your user ID and password.

If there is a problem with the access to the CNI, an error dialog box “Error setting up data manager: can not open serial port” will pop up, in that case check if this COM port exists or is not already in use.

Prior to connecting or disconnecting an AISG jumper from the output; please switch off the CNI.

7 Site commissioning

Once the CNI is on, run NEM-ALD-S which starts by scanning the devices connected to the 3 outputs.
Every RET must be configured and calibrated before operation. Please refer to the section “NEM-ALD ACU configuration” in the user manual.

There is mandatory information required before the site can be controlled remotely:

- The CNI IP address described in sections 2.1.1 and 2.2
- Each RET Serial Number must be assigned a Sector ID and Antenna Model Number (up to 15 characters)
- Each TMA must be assigned a sector ID

The Sector ID is a text string with up to 4 characters for Modbus (and AISG 1.1) or 32 for AISG 2.0.

Also the following information is optional but can be useful

- The CNI location (0 to 32 characters) and baseStation ID (0 to 12)
- The devices installation date

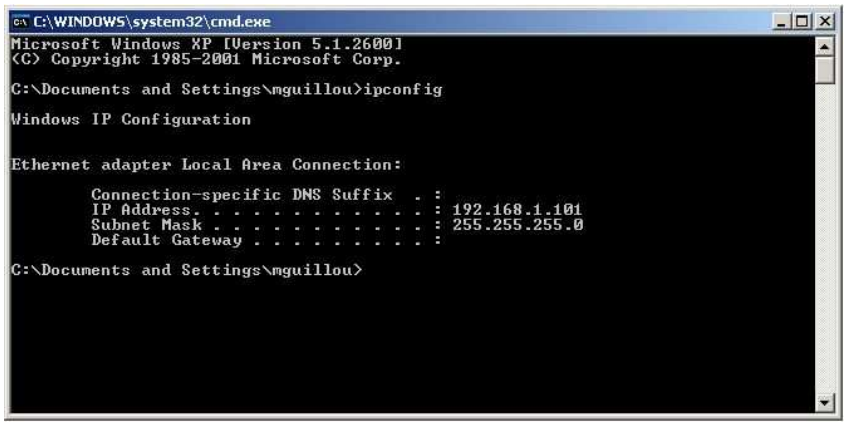
8 FAQ

8.1 RFSLocateIP cannot detect the CNI

The host PC must have an IP address.
For verification, launch Start / Run then type ‘cmd’ and click ‘OK’ button.

Figure 8-1: Launching the Command window

Type in ‘ipconfig’ at the prompt into the console window, followed by <ENTER> and check the IP settings.


C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
C:\Documents and Settings\mguillou>ipconfig
Windows IP Configuration
Ethernet adapter Local Area Connection:
Connection-specific DNS Suffix . :
IP Address. . . . . : 192.168.1.101
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :
C:\Documents and Settings\mguillou>

Figur 8-2: ipconfig to verify the IP setting of the computer

Please refer to section 2.1.2 to set the PC IP address.
Contact the IT department so that the host PC has the permission to access to the network of the CNIs.

8.2 NEM-ALD-S indicates that the CNI cannot be reached

The connection between host and CNI must be configured to allow access from NEM-ALD-S. To check it, ping the CNI: launch “Start / Run …” then type ‘cmd’ and click “OK” button: type in ‘ping’ followed by a space and the IP address of the CNI at the prompt into the console window, <ENTER>. The expected result is to show that no packet was lost and without any timeout.

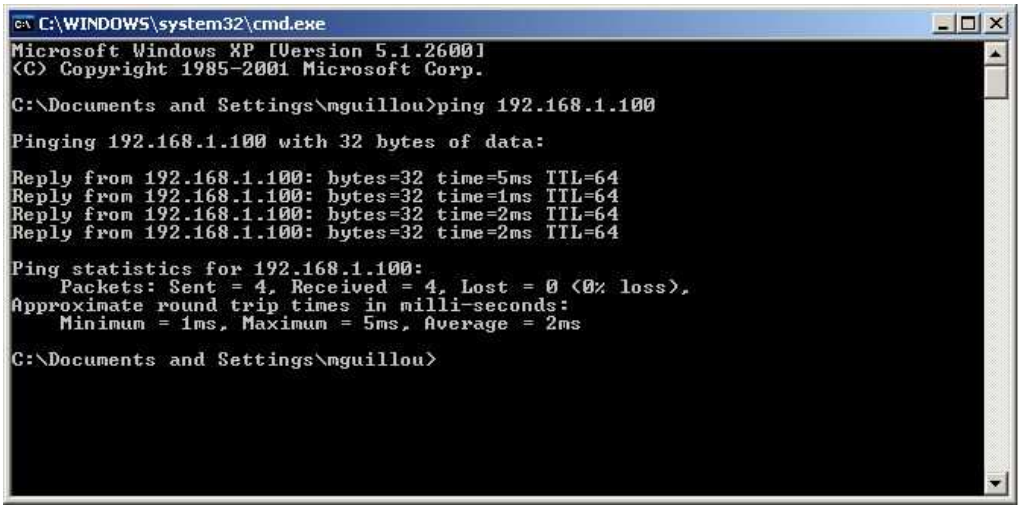

C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
C:\Documents and Settings\mguillou>ping 192.168.1.100
Pinging 192.168.1.100 with 32 bytes of data:
Reply from 192.168.1.100: bytes=32 time=5ms TTL=64
Reply from 192.168.1.100: bytes=32 time=1ms TTL=64
Reply from 192.168.1.100: bytes=32 time=2ms TTL=64
Reply from 192.168.1.100: bytes=32 time=2ms TTL=64
Ping statistics for 192.168.1.100:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 5ms, Average = 2ms
C:\Documents and Settings\mguillou>

Figure 8-3: Result of the ‘ping’ command

If the 'ping' command doesn't work, check with IT administrator the IP address configuration (address, netmask, gateway) and the router configuration (firewall, filter, …). The PC and CNIs must belong to the same subnetwork.

Notes for the IT administrator
NEM-ALD-S uses ping, SNMP (port 161) and FTP protocol, which shall be authorized by network connection.

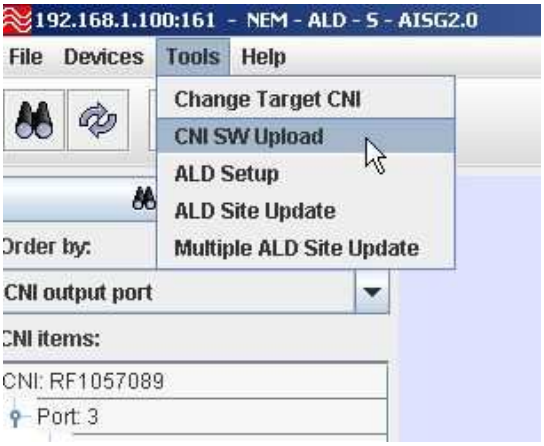
8.3 How to download a new Antenna Configuration file?

Please refer to the user guide of the appropriate NEM application and to the section "RET configuration".

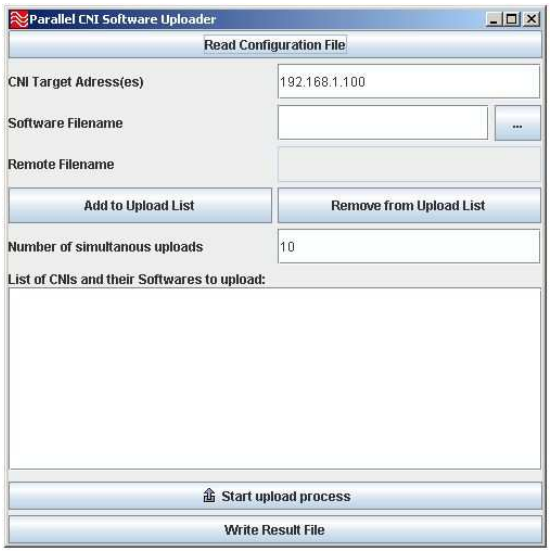
8.4 How to upgrade the CNI firmware ?

The CNI can be configured to manage a different protocol. This operation is carried out by upgrading its firmware.

Select the "Tools / CNI SW Upload" menu:

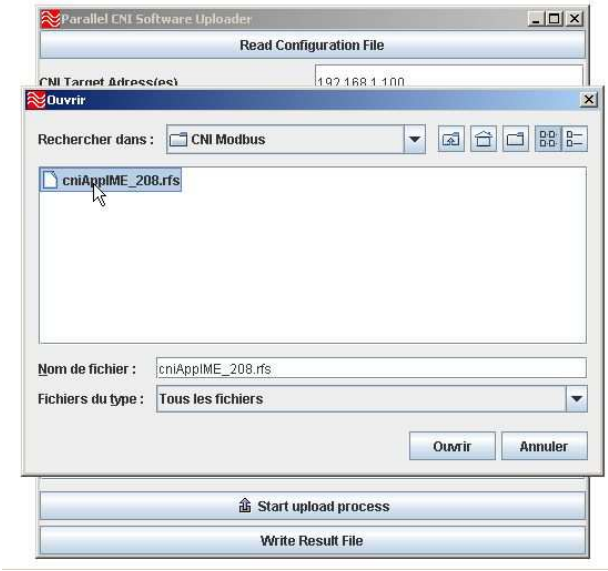


The following window will pop up:

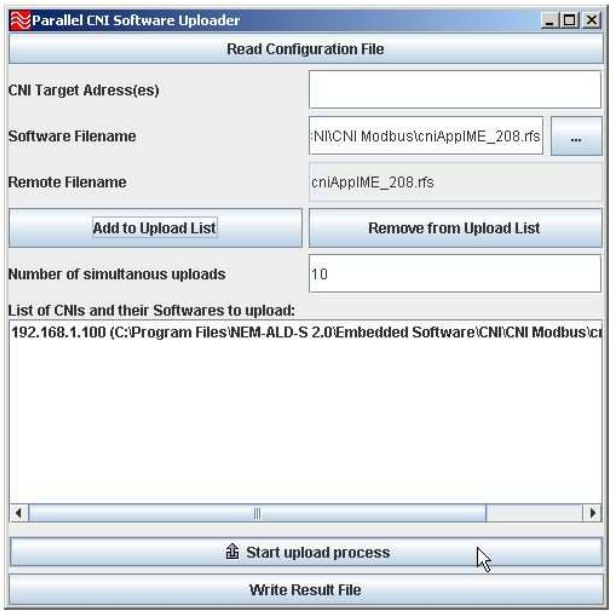


The address of the CNI to which the PC is connected appears into the CNI Target textbox.

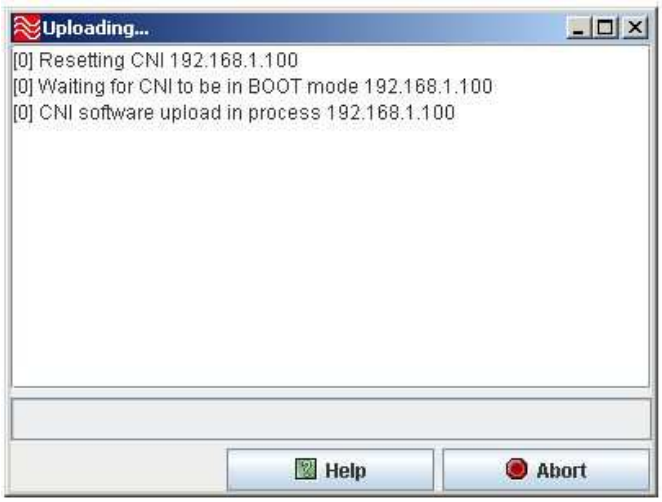
Click the "…" button to choose the appropriate CNI firmware to download.
Into the window that pops up, click the file to be downloaded and make sure its name is in the "File name" textbox, then click "Open".



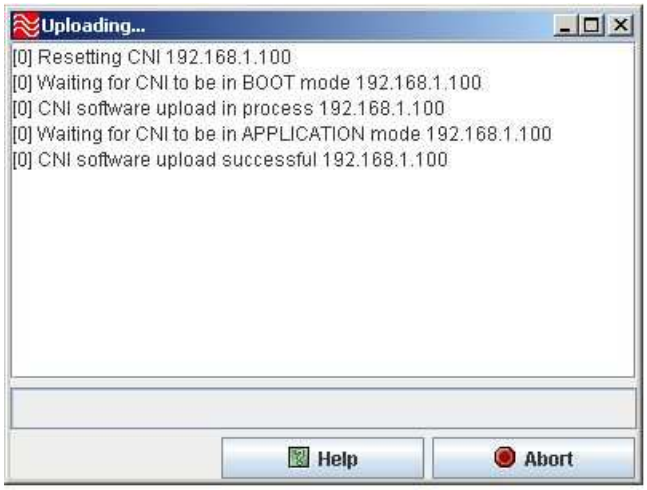
Click “Add to Upload List” button first and then on “Start upload process” button.



A new window shows each step of the downloading process:


Uploading...
[0] Resetting CNI 192.168.1.100
[0] Waiting for CNI to be in BOOT mode 192.168.1.100
[0] CNI software upload in process 192.168.1.100
Help
Abort

This operation may last a couple minutes, a message showing it is complete will prompt in the “Uploading…” window. The operating system may display messages such as “disconnected network” during the process.

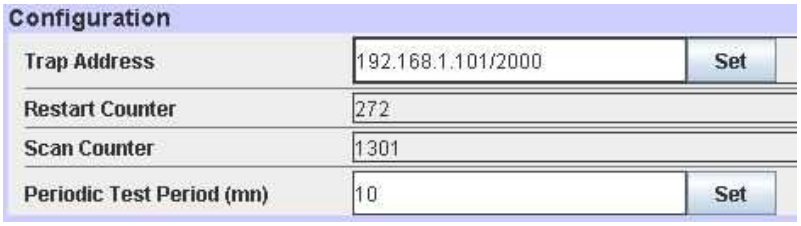

Uploading...
[0] Resetting CNI 192.168.1.100
[0] Waiting for CNI to be in BOOT mode 192.168.1.100
[0] CNI software upload in process 192.168.1.100
[0] Waiting for CNI to be in APPLICATION mode 192.168.1.100
[0] CNI software upload successful 192.168.1.100
Help
Abort

Close this window by clicking on the “x” at its top and right corner and also the “CNI software uploader”.
The CNI will perform a scanning of the elements connected to the 3 outputs; the CNI is able to identify only the devices that use the same protocol.

8.5 Some windows are not refreshed in NEM-ALD-S

The reason why the windows are not refreshed during a scanning or a tilt setting, is because NEM-ALD-S did not receive the acknowledge from the CNI.
Make sure that the firewall does not block NEM-ALD-S; terminate and re-launch the NEM-ALD-S application once the power of the CNI has been recycled.

The trap address of the CNI must be set : this is the IP address/Port Number to which the CNI will send the traps (signal that a task such as setting the tilt is complete or error messages). It should be the IP address of the computer where NEM-ALD-S is running.
In NEM-ALD-S, click the status of the CNI and key in the IP address of the PC followed by ‘/2000’, then click the “Set” button.



Setting the trap address of the CNI

8.6 How to update the NEM-ALD-S or NEM-ALD-A applications?

Before installing a new application, the already installed NEM-ALD-S program must be removed.
There are 2 ways to uninstall NEM-ALD:

- Open the Control panel, launch the “Add or Remove Programs”; once the list refreshed, select the “NEM-ALD-S” or “NEM-ALD-A” program and click “Remove” button.

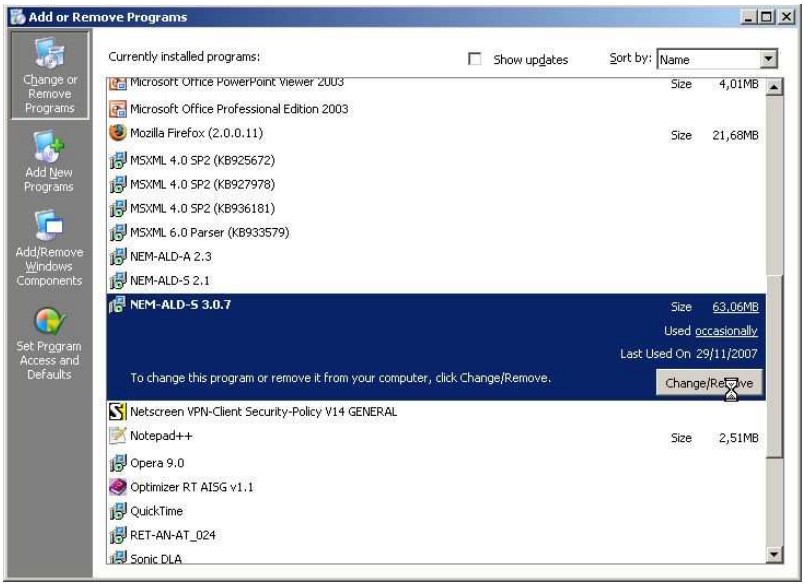


Figure 8-4: Removing the application through the control panel

- From the Start menu, select the NEM-ALD program and click the installation

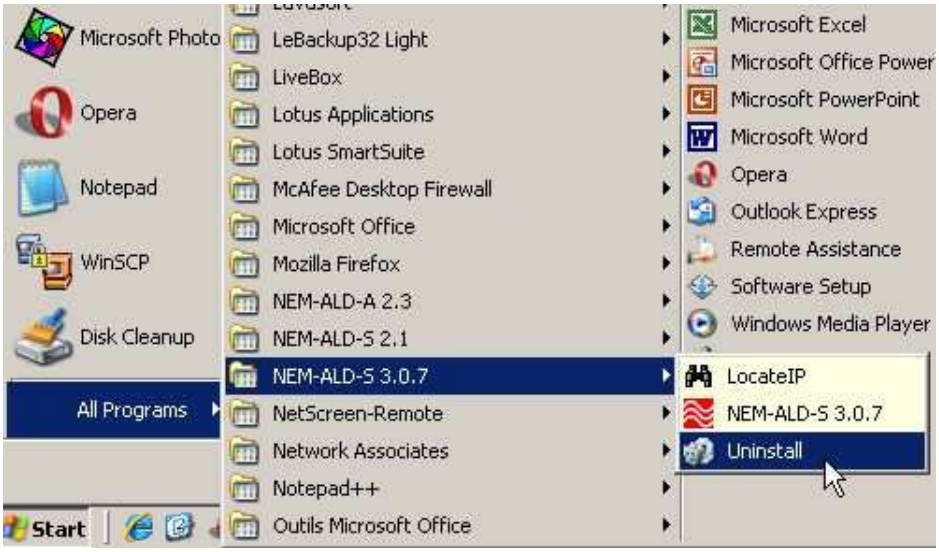


Figure 8-5: Removing the application through the Start menu